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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,418	03/31/2004	John M. Boyd	LAM2P471	8826
25920	7590	12/20/2005	EXAMINER	
MARTINE PENILLA & GENCARELLA, LLP			THOMAS, DAVID B	
710 LAKEWAY DRIVE			ART UNIT	
SUITE 200			PAPER NUMBER	
SUNNYVALE, CA 94085			3723	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/816,418

Applicant(s)

BOYD ET AL.

Examiner

David B. Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 8-11, 14-20 and 23 is/are rejected.
7) ☒ Claim(s) 12, 13, 21 and 22 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see paragraph 3, page 5, filed 14 November 2005, with respect to the rejection(s) of claim(s) 8-22 under 35 U.S.C. 103(e) as being anticipated by Vanell et al. have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Elledge (US 2004/0142635 A1) and Kassir et al. (5,964,646).

Drawings

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings are informal and lacking sufficient quality. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an

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application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 8-11, 14, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Elledge (US 2004/0142635 A1).

Elledge discloses a carrier assembly 130 includes a chamber 114 in the head 132, a first bladder 160a in the chamber 114, and a second bladder 160b in the chamber 114. The bladders 160 are fluid cells or fluid compartments that are suitable for containing fluid in discrete compartments within the head 132. FIG. 3 is a schematic cross-sectional top view taken substantially along line A-A of FIG.

2. The first and second bladders 160a-b each have an annular shape and are arranged concentrically with the first bladder 160a surrounding the second bladder 160b. In other embodiments, such as those described below with reference to FIGS. 5A-5C, the chamber 114 may contain a different number and/or configuration of bladders. In additional embodiments, the chamber 114 may not contain a bladder. Referring to FIG. 2, each bladder 160 includes a membrane 161 and a cavity 170 (identified individually as 170a-b) defined by the membrane 161. The cavities 170 can contain a magnetic fluid 110, such as a magnetorheological fluid, that changes viscosity in response to a magnetic field. For example, in one embodiment, the viscosity of the magnetic fluid 110 can increase from a viscosity similar to that of motor oil to a viscosity of a nearly solid material depending upon the polarity and magnitude of a magnetic field applied to the magnetic fluid 110 [0025-0026]. The carrier assembly 130 can further include a flexible plate 190 and a flexible member 198 coupled to the flexible plate 190. The flexible plate 190 sealably encloses the bladders 160 in the

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chamber 114. In one aspect of this embodiment, the flexible plate 190 includes holes 192 and a vacuum line 194 coupled to the holes 192. The vacuum line 194 can be coupled to a vacuum source (not shown) to draw portions of the flexible member 198 into the holes 192, creating small suction cups across the back side of the workpiece 12 that hold the workpiece 12 to the flexible member 198. In other embodiments, the flexible plate 190 may not include the vacuum line 194 and the workpiece 12 can be secured to the carrier assembly 130 by another device. In the illustrated embodiment, the flexible member 198 is a flexible membrane. In other embodiments, the flexible member 198 can be a bladder or another device that prevents planarizing solution (not shown) from entering the chamber 114. In additional embodiments, the carrier assembly 130 may not include the flexible plate 190 and/or the flexible member 198 [0029].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elledge, as discussed above, in view of Kassir et al. (5,964,646).

Elledge discloses the rotatable semiconductor substrate support, as claimed, however, the “planarization module” of Elledge places the substrate and substrate support *above* the planarizing surface, rather than the inverse, and

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Elledge cites the planarizing surface as being a polishing pad rather than a grinding wheel. Kassir et al. teach that it is known to provide a "planarization module" where the substrate is supported from below, and to provide a grinding wheel for the planarization of the substrate. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the semiconductor substrate support of Elledge in a "planarization module", such as that demonstrated by Kassir et al., where the substrate is supported from below rather than above, and to provide in that "planarization module", a grinding wheel for performing the planarization of the substrate, also demonstrated by Kassir et al., rather than a polishing pad.

Allowable Subject Matter

7. Claims 12, 13, 21, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: It is the examiner's opinion that the art of record considered as a whole, alone or in combination, neither anticipates nor renders obvious the provisions of either a semi-conductive polymer material disposed on an outer surface of the outer membrane, or the outer membrane having a polymer configured to change compliance in response to the electromagnetic field being applied to the substrate support.

Conclusion

Any inquiry concerning this communication or earlier communications from

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the examiner should be directed to David B. Thomas whose telephone number is (571) 272-4497. The examiner can normally be reached on 10-7 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph J. Hail can be reached on (571) 272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David B. Thomas
Primary Examiner
Art Unit 3723

dbt